

## FY2018 1<sup>st</sup> Half Financial Results (Ended August 31, 2018)

## FY2018 2<sup>nd</sup> Half and Full-Year Forecasts (Ending February 28, 2019)

### Notes:

- **The Company changed its accounting period in fiscal 2017 from March 20 to the last day of February. As a result of this change, the period for the first half of the fiscal year ending February 2019 (From March 1, 2018 to August 31, 2018) is different from that of the first half of the previous fiscal year (From March 21, 2017 to September 20, 2017). Therefore, the year-on-year changes of the 1H results in this material are shown as <reference>.**
- The information within this document is made as of the date of writing. Any forward-looking statements are made according to the assumptions of management and are subject to change as a result of risks and uncertainties. YASKAWA Electric Corporation undertakes no obligation to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise.
- Figures in this document are rounded off, and may differ from those in other documents such as financial results.

**YASKAWA ELECTRIC CORPORATION (TSE6506)**

# Contents

---

## 1. FY2018 1H Financial Results

- FY2018 1H Financial Results  
(Highlights, By Business Segment)
- Business Segment Overview  
(Motion Control, Robotics, System Engineering)
- Sales Breakdown by Business Segment  
(FY2017 1H → FY2018 1H)
- Sales Breakdown by Destination  
(FY2017 1H → FY2018 1H)
- Breakdown of Changes in Operating Income  
(FY2017 1H → FY2018 1H)
- Measures for FY2018 2Q

## 2. FY2018 2H & Full-Year Forecasts

- FY2018 Financial Forecasts  
(Highlights, By Business Segment)
- Breakdown of Changes in Operating Income  
(FY2017 → FY2018 Forecasts)
- Measures for FY2018 2H

## 3. Reference

- Capital Expenditure, R&D Investment, Forex Rates and Sensitivity
- Financial Indices
- Net Sales/Operating Income
- Quarterly Sales Trends
- Quarterly Order Trends
- Major Production Bases

# Business Overview

## Motion Control

### 【Core products】

- AC servo motors and controllers
- Linear servo motors
- AC drives



AC servo motor  
Σ-7 series



Yaskawa AC drive  
new series

Matrix  
converter  
U1000

## Robotics

### 【Core products】

- Industrial robots
  - Arc and spot welding robots, painting robots
  - FPD glass sheet transfer robots, handling robots
- Semiconductor wafer transfer robots
- Biomedical robots
- Collaborative robots



New small robot  
MOTOMAN-GP8

7-axis arc-welding  
robot  
MOTOMAN-AR1440E

Collaborative robot  
MOTOMAN-HC10DT  
Hand-carry model

## System Engineering

### 【Core products】

- Electrical systems for steel plants
- Electrical instrumentation systems for water supply plants and sewage treatment facilities
- Large-scale wind power generator and converter
- PV inverters



Generator and converter for  
large-scale wind turbines



PV inverter for  
photovoltaic power  
generation



Continuous-casting machine



Electrical  
instrumentation  
systems for water  
and sewerage

## Other

### 【Core products】

- EV drive system
- Logistics

---

# **1. FY2018 1H Financial Results**

## **(Six Months Ended August 31, 2018)**

## FY2018 1H Financial Results (Highlights)

- Sales and profits increased, while they fell short of the forecasts  
(Sales and profits marked record high as 1H results)**

	<b>FY2018 1H</b> (Mar.-Aug.) Results	FY2017 1H (Apr.-Sep.) Results	<b>Changes</b> 〈Reference〉		FY2018 1H (Mar.-Aug.) Forecasts
			<b>Amounts</b>	<b>%</b>	
<b>Net sales</b>	<b>¥ 248.2bn.</b>	¥ 229.1bn.	<b>+¥ 19.1bn.</b>	<b>+8.3%</b>	¥ 258.5bn.
<b>Operating income</b>	<b>¥ 30.5bn.</b>	¥ 27.8bn.	<b>+¥ 2.7bn.</b>	<b>+9.7%</b>	¥ 33.3bn.
<b>Ordinary income</b>	<b>¥ 30.6bn.</b>	¥ 27.5bn.	<b>+¥ 3.1bn.</b>	<b>+11.4%</b>	¥ 33.8bn.
<b>Profit attributable to owners of parent</b>	<b>¥ 26.1bn.</b>	¥ 21.1bn.	<b>+¥ 5.0bn.</b>	<b>+23.6%</b>	¥ 26.5bn.

# FY2018 1H Financial Results by Business Segment

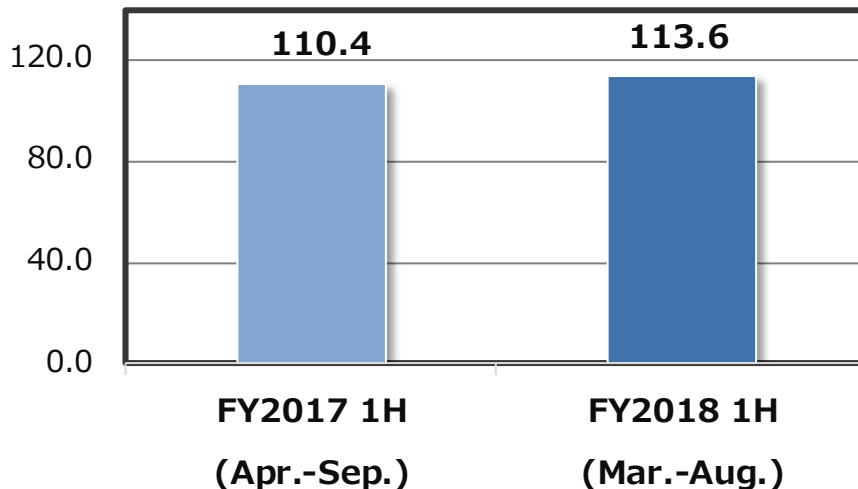
- Sales and profits grew in (M) and (R)
- Profitability improved in (S) as structural reform progressed

	FY2018 1H		FY2017 1H		Changes <Reference>	
	(Mar.-Aug.) Results	Income ratio	(Apr.-Sep.) Results	Income ratio	Amounts	%
(Billions of yen)						
<b>Net sales</b>	<b>248.2</b>		229.1		<b>+19.1</b>	<b>+8.3%</b>
<b>Motion Control</b>	<b>113.6</b>		110.4		<b>+3.2</b>	<b>+2.9%</b>
<b>Robotics</b>	<b>88.2</b>		80.4		<b>+7.8</b>	<b>+9.6%</b>
<b>System Engineering</b>	<b>27.7</b>		28.2		<b>-0.5</b>	<b>-1.6%</b>
<b>Other</b>	<b>18.8</b>		10.1		<b>+8.6</b>	<b>+85.3%</b>
<b>Operating income</b>	<b>30.5</b>	<b>12.3%</b>	27.8	12.1%	<b>+2.7</b>	<b>+9.7%</b>
<b>Motion Control</b>	<b>22.2</b>	<b>19.6%</b>	21.8	19.7%	<b>+0.4</b>	<b>+2.0%</b>
<b>Robotics</b>	<b>9.2</b>	<b>10.5%</b>	8.6	10.6%	<b>+0.7</b>	<b>+7.8%</b>
<b>System Engineering</b>	<b>-0.5</b>	<b>-1.8%</b>	-1.8	-6.3%	<b>+1.3</b>	-
<b>Other</b>	<b>0.6</b>	<b>3.1%</b>	-0.1	-0.5%	<b>+0.6</b>	-
<b>Elimination or Corporate</b>	<b>-1.0</b>	-	-0.7	-	<b>-0.3</b>	-
<b>Ordinary income</b>	<b>30.6</b>	<b>12.3%</b>	27.5	12.0%	<b>+3.1</b>	<b>+11.4%</b>
<b>Profit attributable to owners of parent</b>	<b>26.1</b>	<b>10.5%</b>	21.1	9.2%	<b>+5.0</b>	<b>+23.6%</b>

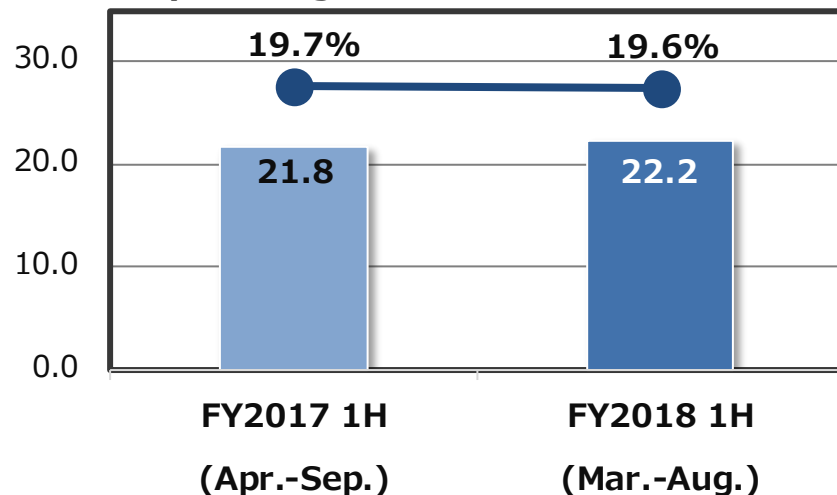
Note: (M) = Motion Control (R) = Robotics (S)=System Engineering

# Business Segment Overview: Motion Control

**Sales** (Billions of yen)



**Operating income/loss** (Billions of yen)  
**Operating income ratio** (%)



## 【Sales】

<AC servo & controller business>

- The smartphone-related demand in China slowed down, and semiconductor-related capital expenditures were weak in 2Q.

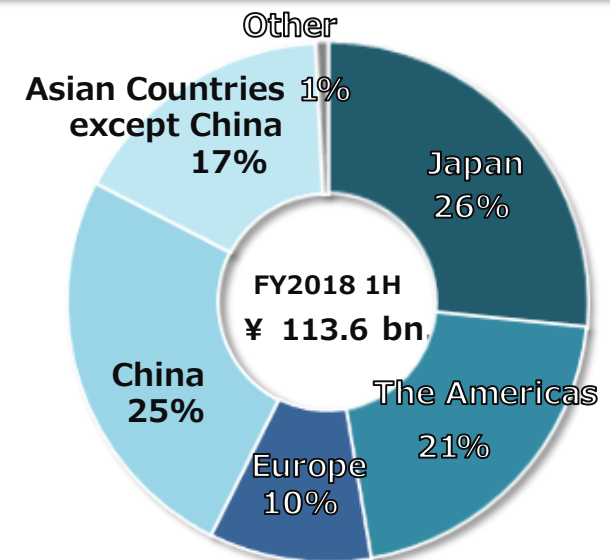
<Drives business>

- The energy-saving demand due to tightening of environmental regulation in China and U.S. oil&gas-related demand were steady.

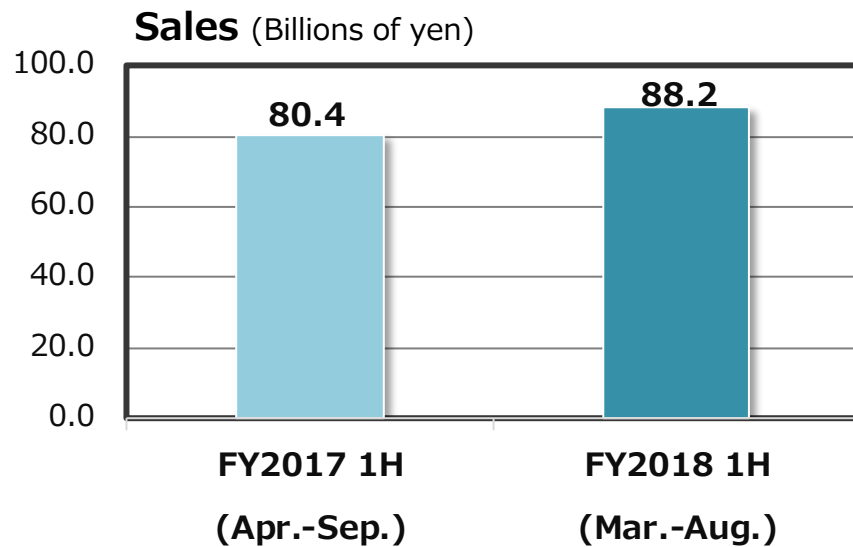
## 【Operating income】

- Although AC servo & controller business was stagnant, drives business was strong globally, which led to a solid profitability.

## Sales breakdown by region



# Business Segment Overview: Robotics

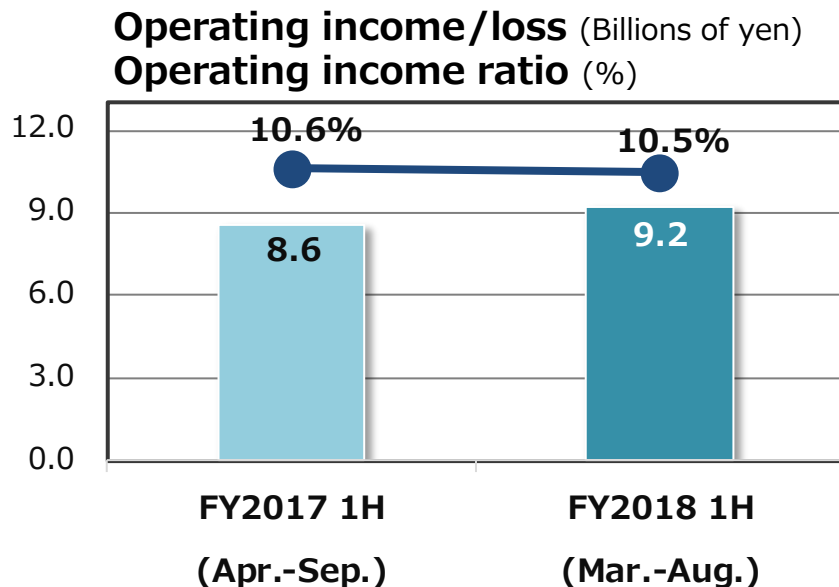


## 【Sales】

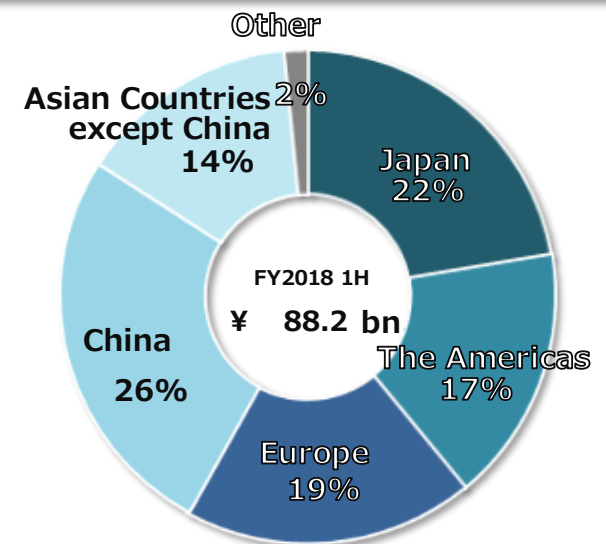
- Automobile-related sales were strong especially in Japan, Europe and China.
- There was continued demand for automation of production in the general industry sector, while the smartphone-related demand slowed down.

## 【Operating income】

- Sales increase led to an increase in profit.



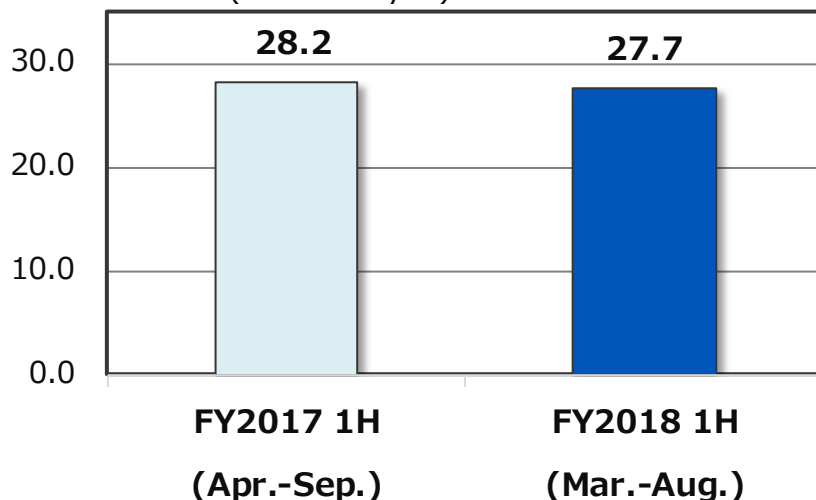
## Sales breakdown by region





# Business Segment Overview: System Engineering

**Sales** (Billions of yen)



## 【Sales】

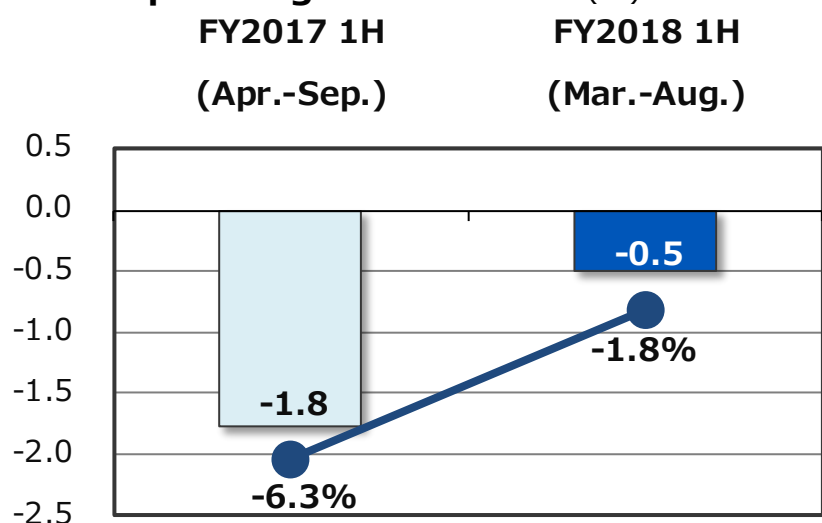
- Sales of the steel plant and social system businesses were solid, even though there was some effect from the issue in the progress of projects in Japan.
- As for the clean power business, sales related to large-scale wind turbines grew in Europe, while the PV inverter sales were sluggish.

## 【Operating income】

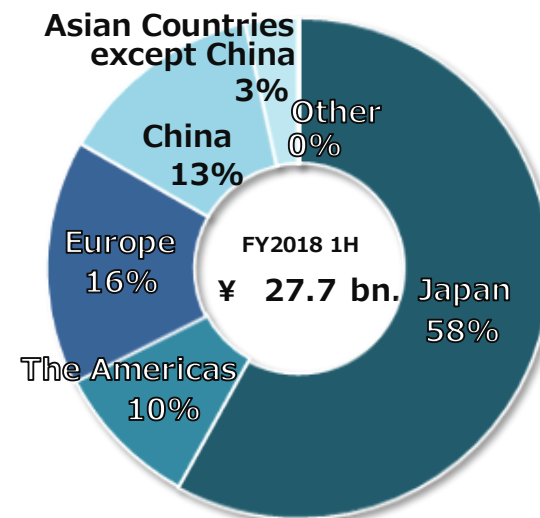
- Profitability improved due to the structural reforms especially in the clean power area.

**Operating income/loss** (Billions of yen)

**Operating income ratio** (%)

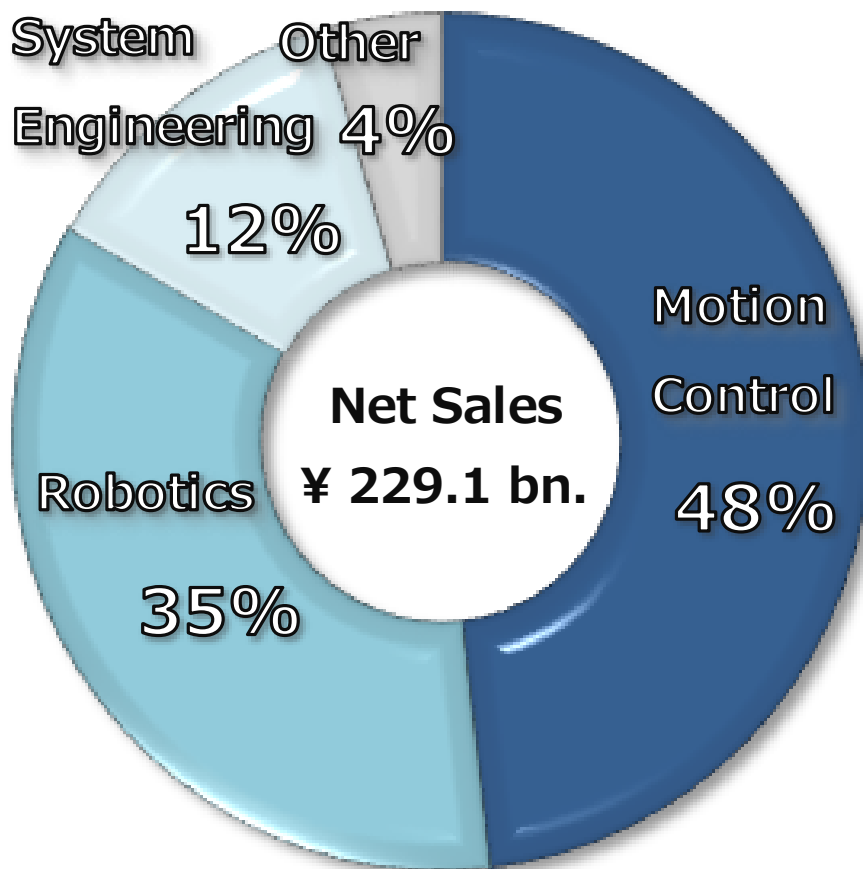


## Sales breakdown by region

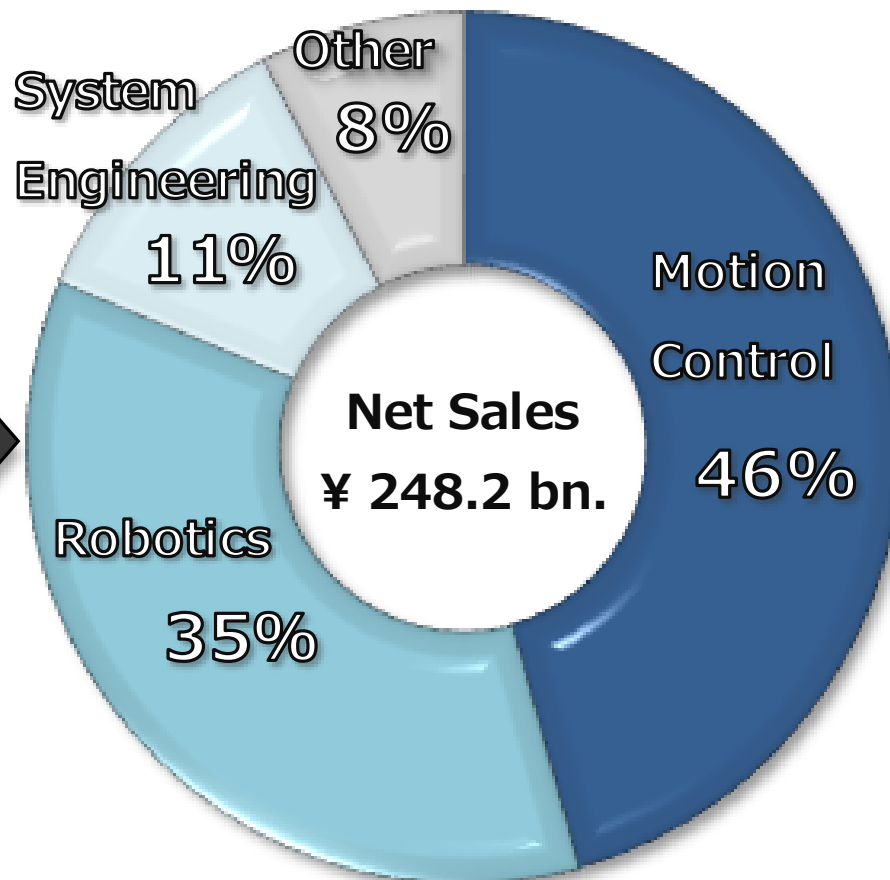


# Sales Breakdown by Business Segment

**FY2017 1H**(Apr.-Sep.)



**FY2018 2H**(Mar.-Aug.)



## Sales Breakdown by Destination (1) (FY2017 1H → FY2018 1H)

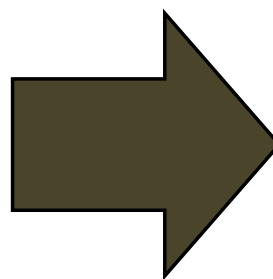
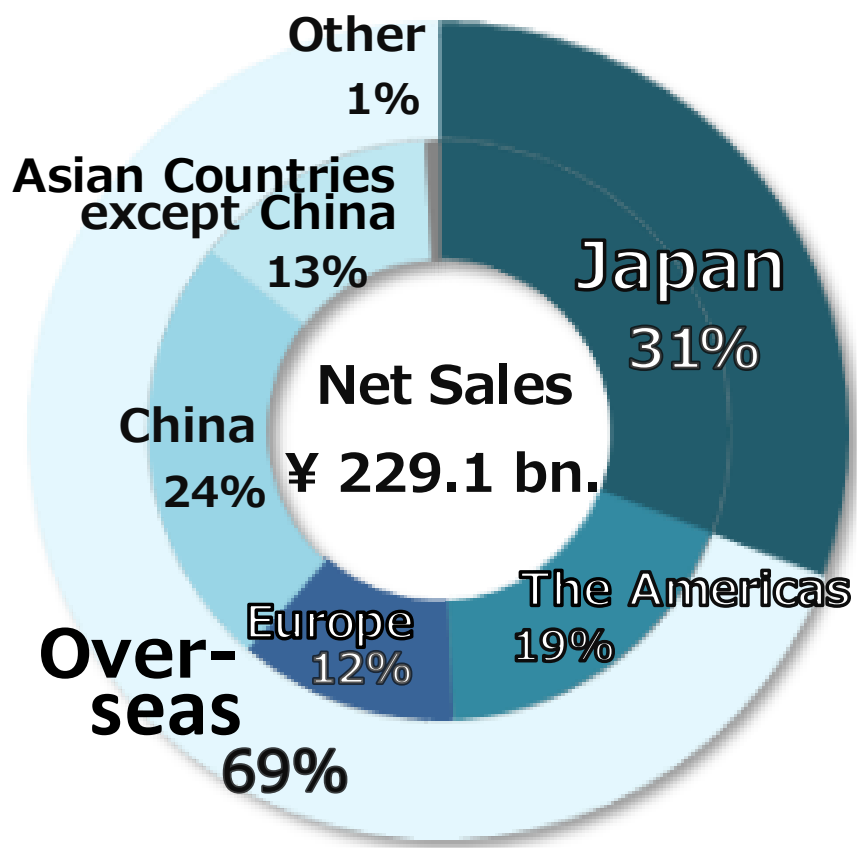
- Sales increased in all regions but the Americas.

	FY2018 1H(Mar.-Aug.)	FY2017 1H(Apr.-Sep.)	Changes (Reference)	
			Amounts	%
(Billions of yen)				
<b>Net sales</b>	<b>248.2</b>	229.1	<b>+19.1</b>	<b>+8.3%</b>
<b>Japan</b>	<b>78.6</b>	70.6	<b>+8.0</b>	<b>+11.4%</b>
<b>Overseas</b>	<b>169.7</b>	158.6	<b>+11.1</b>	<b>+7.0%</b>
<b>The Americas</b>	<b>41.0</b>	42.4	<b>-1.4</b>	<b>-3.2%</b>
<b>Europe</b>	<b>32.5</b>	27.9	<b>+4.6</b>	<b>+16.4%</b>
<b>China</b>	<b>58.7</b>	55.5	<b>+3.2</b>	<b>+5.8%</b>
Asian Countries except China	<b>35.3</b>	30.9	<b>+4.4</b>	<b>+14.3%</b>
<b>Other</b>	<b>2.1</b>	1.8	<b>+0.3</b>	<b>+15.0%</b>

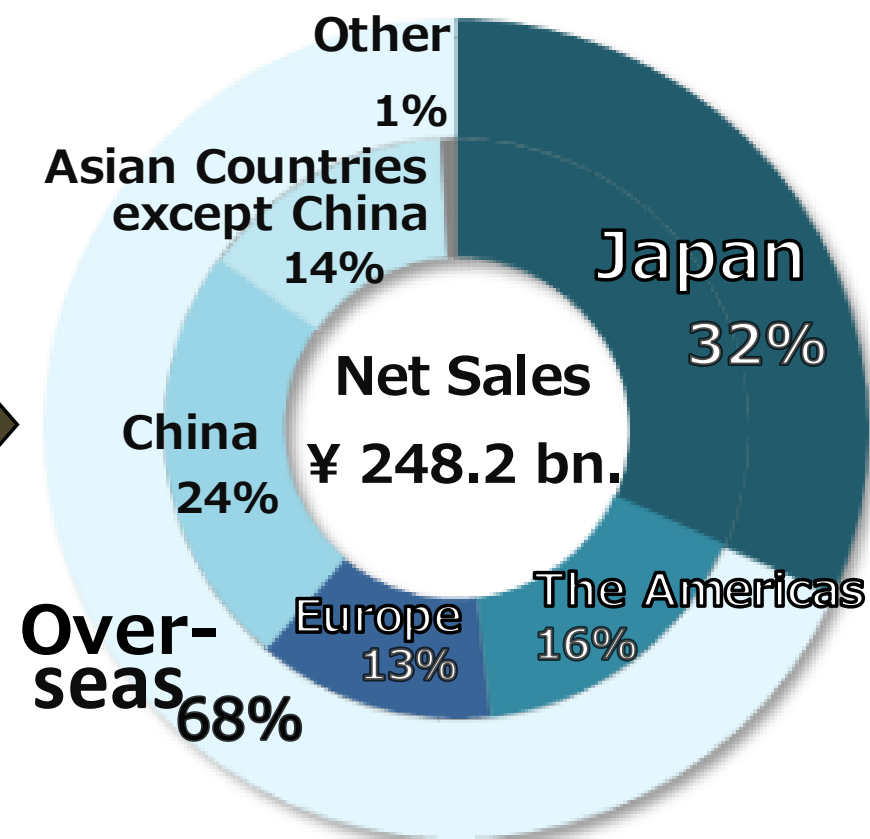
Note: Other includes Australia and South Africa, etc.

## Sales Breakdown by Destination (2)

**FY2017 1H** (Apr.-Sep.)

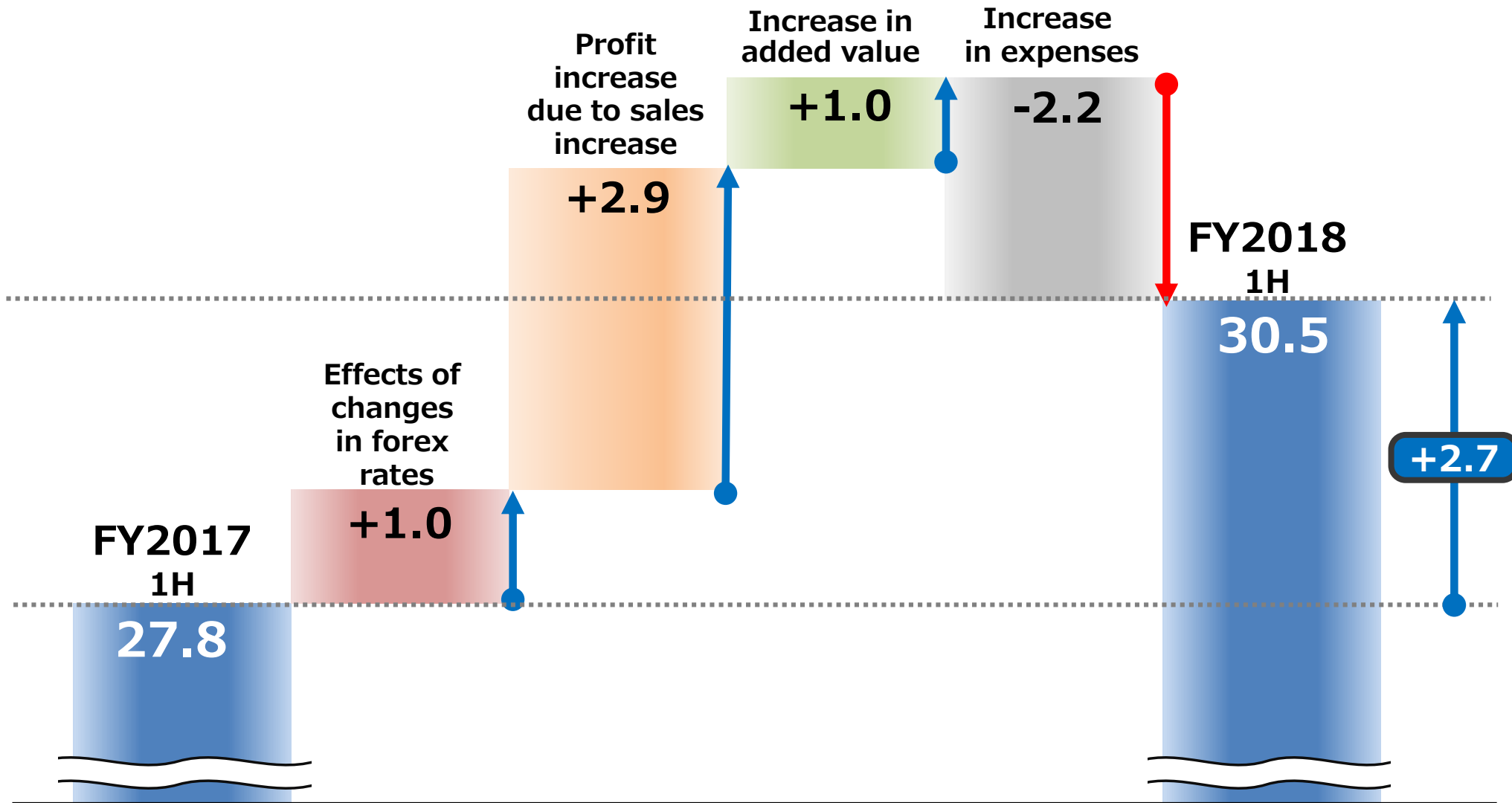


**FY2018 1H** (Mar.-Aug.)



# Breakdown of Changes in Operating Income (FY2017 1H → FY2018 1H)

(Billions of yen)



# Measures for FY2018 2Q

## ➤ Profitability improvement in core businesses

### ➔ Capital tie-up with ANHUI RUIXIANG INDUSTRIAL in China (July 2018)

- Collaboration for sales expansion of automobile production equipment including that of Evs

## ➤ Continuous evolution of capabilities in development, production and sales

### ➔ Launch of products and solutions for the realization of i<sup>3</sup>-Mechatronics concept

- Rollout of a software tool “YASKAWA Cockpit” (June 2018)
- Rollout of solutions for integrated control of AC servo motors and robots (August 2018)



Application of integrated control of AC servo and robots

### ➔ Expansion of production capacity in China

- No.3 plants in Changzhou (for robots) and Shenyang (for AC servo drives) started operation (July 2018)



No.3 plants in Changzhou(upper) and Shenyang(lower)

## ➤ Expansion of new businesses

### ➔ Commercialization of business in the food market

- Establishment of FAMS\* for the production and sales of equipment for vegetable production systems (August 2018)

\* Food & Agri Mechatro Solution Inc.

---

## **2. FY2018/2H and Full-Year Financial Forecasts (Ending February 28, 2019)**

# FY2018 Full-Year Financial Forecasts (Highlights)

- Increases in sales and profits are forecasted (Record highs as full-year results)
- Forecast figures are revised down on the back of slowdown in the semiconductor-related investments and weakness in the Chinese market.

	<b>FY2018 Forecasts</b>	FY2017 〈Reference basis〉 Results	<b>Changes</b> 〈Reference〉		<u>FY2018</u> <u>Previous forecasts</u>
			<b>Amounts</b>	<b>%</b>	
<b>Net sales</b>	<b>¥ 498.0bn.</b>	¥ 464.5bn.	<b>+¥ 33.5bn.</b>	<b>+7.2%</b>	¥ 510.0bn.
<b>Operating income</b>	<b>¥ 59.0bn.</b>	¥ 57.1bn.	<b>+¥ 1.9bn.</b>	<b>+3.3%</b>	¥ 65.5bn.
<b>Ordinary income</b>	<b>¥ 60.0bn.</b>	¥ 58.3bn.	<b>+¥ 1.7bn.</b>	<b>+2.9%</b>	¥ 67.0bn.
<b>Profit attributable to owners of parent</b>	<b>¥ 47.0bn.</b>	¥ 41.7bn.	<b>+¥ 5.3bn.</b>	<b>+12.6%</b>	¥ 50.0bn.

Note: FY2017 figures are reference-basis, which are based on an assumption that the accounting period remained unchanged  
(from March 21, 2017 to March 20, 2018)



# FY2018 Full-Year Financial Forecasts by Business Segment

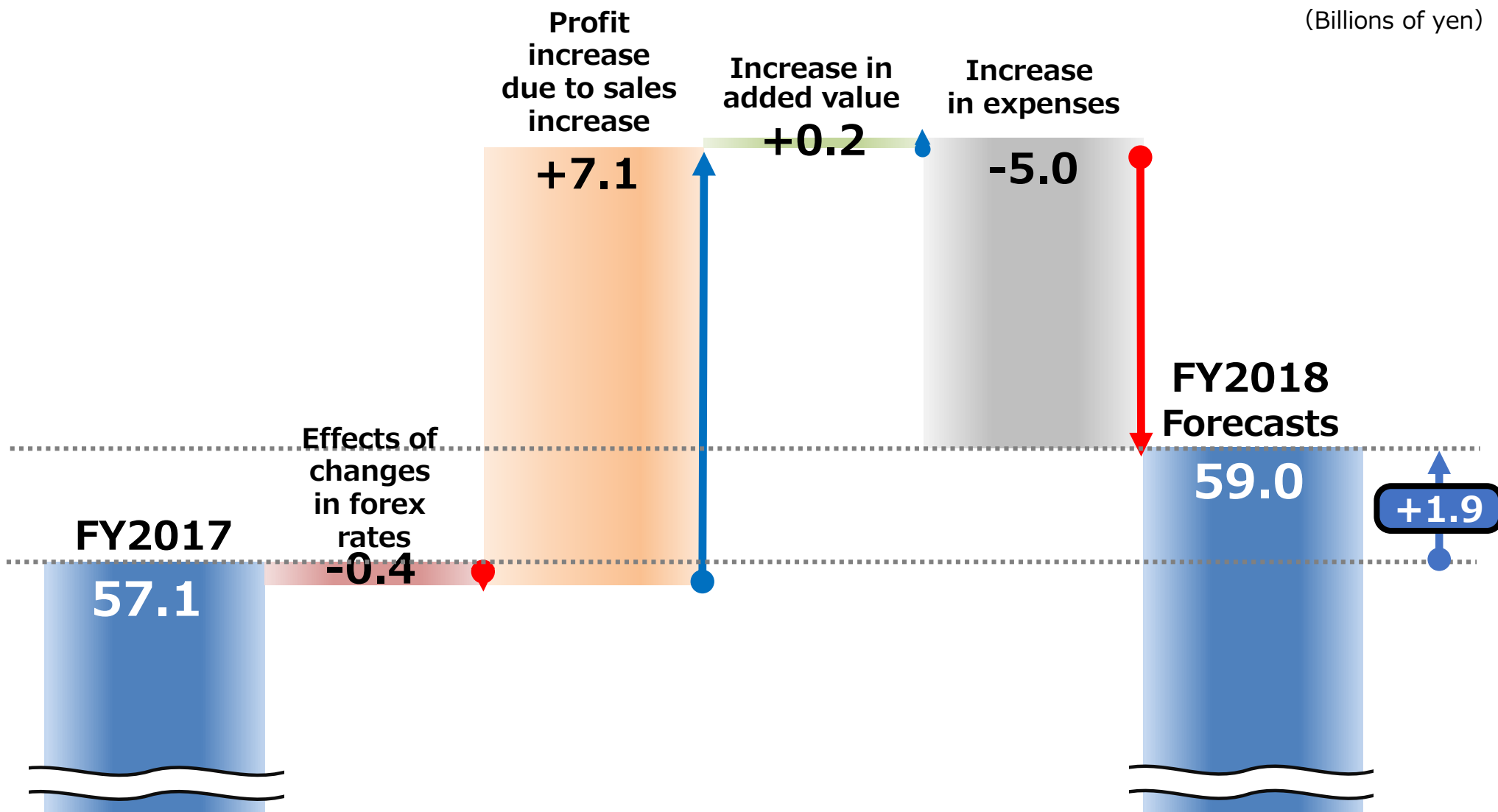
- Forecast figures are revised down mainly in Motion Control due to the slowdown in the AC servo and controller business

	FY2018		FY2017		Changes <Reference>		FY2018	
	Forecasts	Income ratio	Results <Reference basis>	Income ratio	Amounts	%	Previous forecasts	Income ratio
<b>Net sales</b>	<b>498.0</b>		464.5		<b>+33.5</b>	<b>+7.2%</b>	510.0	
<b>Motion Control</b>	<b>218.0</b>		215.2		<b>+2.8</b>	<b>+1.3%</b>	229.5	
<b>Robotics</b>	<b>185.0</b>		166.8		<b>+18.2</b>	<b>+10.9%</b>	185.9	
<b>System Engineering</b>	<b>61.0</b>		61.3		<b>-0.3</b>	<b>-0.4%</b>	58.7	
<b>Other</b>	<b>34.0</b>		21.1		<b>+12.8</b>	<b>+60.8%</b>	35.9	
<b>Operating income</b>	<b>59.0</b>	<b>11.8%</b>	57.1	12.3%	<b>+1.9</b>	<b>+3.3%</b>	65.5	12.8%
<b>Motion Control</b>	<b>41.0</b>	<b>18.8%</b>	42.3	19.6%	<b>-1.2</b>	<b>-2.9%</b>	45.2	19.7%
<b>Robotics</b>	<b>19.8</b>	<b>10.7%</b>	18.5	11.1%	<b>+1.4</b>	<b>+7.3%</b>	21.7	11.7%
<b>System Engineering</b>	<b>-0.4</b>	<b>-0.7%</b>	-2.1	-3.4%	<b>+1.7</b>	-	-0.2	-0.3%
<b>Other</b>	<b>0.6</b>	<b>1.9%</b>	-0.2	-0.7%	<b>+0.8</b>	-	0.9	2.5%
<b>Elimination or Corporate</b>	<b>-2.1</b>	-	-1.4	-	<b>-0.7</b>	-	-2.1	-
<b>Ordinary income</b>	<b>60.0</b>	<b>12.0%</b>	58.3	12.6%	<b>+1.7</b>	<b>+2.9%</b>	67.0	13.1%
<b>Profit attributable to owners of parent</b>	<b>47.0</b>	<b>9.4%</b>	41.7	9.0%	<b>+5.3</b>	<b>+12.6%</b>	50.0	9.8%

Note: FY2017 figures are reference-basis, which are based on an assumption that the accounting period remained unchanged (from March 21, 2017 to March 20, 2018)

# Breakdown of Changes in Operating Income (FY2017 → FY2018 Forecasts)

(Billions of yen)



Note: FY2017 profit figure is reference-basis, which is based on an assumption that the accounting period remained unchanged (from March 21, 2017 to March 20, 2018)

# Measures for FY2018 2H – (1)

## ➤ Profitability improvement in core businesses

### ➔ Contribution to automation/sophistication of production progressing globally

- Focus on such growth markets as 3C\*, robot, automobile and semiconductor
- Market expansion utilizing open innovation in the IoT field in Europe and the U.S.

\*Stands for Computer, Communication, Consumer. Communication devices such as smartphones and home electronics.

## ➤ Enhancement of capabilities to promote “i<sup>3</sup>-Mechatronics” concept

### ➔ Evolution in development capability

- Speed-up development of products/software to realize i<sup>3</sup>-Mechatronics
- Enhance *glocal* development in Europe, U.S. and China

### ➔ Evolution in production capability

- Demonstrate i<sup>3</sup>-Mechatronics in Yaskawa Solution Factory
- Enhance global production capacity by launching new factories in China (Changzhou and Shenyang) and Slovenia

### ➔ Evolution in sales capability

- Enhance engineering capability by expanding collaboration with business partners
- Strengthen industrial drive system business by acquisition of Yaskawa Automation Drive



Yaskawa Solution Factory (Image)

## Measures for FY2018 2H – (2)

### ➤ Expansion of new businesses

#### ➔ Achieve profitability in clean power business

- PV inverter : Launch of new products and expansion of lineup
- Electric equipment for large-scale wind turbines : Enhance sales capability by launching new products and offering competitive total systems
- Marine drive : Expand sales with the tightening of regulations on exhausts of marine vessels
- EV drive system : Stabilize commercial production at Chery Yaskawa E-Drive System

#### ➔ Promote commercialization in the food market

- Promote automation of vegetable and home-meal replacement production

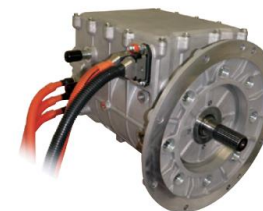
### ➤ Progress initiatives to realize digital management

#### ➔ Build real-time business monitoring system

- Integrate and visualize management data related to production, sales and technology
- Promote thorough automation of business operations



Marine drive products



Motor drive system for EVs

---

## 3 . Reference

# Capital Expenditure, R&D Investment, Forex Rates

## Capital expenditure, R&D investment

(Unit : Billions of Yen)

	F Y 2 0 1 6	F Y 2 0 1 7	F Y 2 0 1 8 (Plan)
Capital expenditure	14.91	19.69	30.00
Depreciation and Amortization	12.08	12.69	14.00
R&D investment	17.98	19.07	21.00

## Forex rates

Note: Average rate during the period

(Unit : Yen)

	F Y 2 0 1 6			F Y 2 0 1 7			F Y 2 0 1 8 (Forecasts)		
	1H	2H	Full-Year	1H	2H	Full-Year	1H(Actual)	2H	Full-Year
U.S. dollar	107.1	109.6	108.4	111.5	111.5	111.5	109.3	110.0	109.7
Euro	120.0	118.4	119.2	124.4	133.3	128.8	129.9	130.0	129.9
Yuan	16.29	16.09	16.19	16.35	17.08	16.71	16.81	16.50	16.66
Won	0.093	0.095	0.094	0.099	0.101	0.100	0.100	0.100	0.100

## Forex sensitivity

(Unit : Billions of Yen)

	Impact of 1% fluctuation (full-year, forecasts)	
	Net sales	Operating income
U.S. dollar	approx. 0.94	approx. 0.23
Euro	approx. 0.76	approx. 0.22
Yuan	approx. 1.15	approx. 0.31
Won	approx. 0.32	approx. 0.19

# Financial Indices

## As of February 28, 2018

➤ Shareholders' equity ratio	53.5%
➤ Shareholders' equity	235.9 billion yen
➤ Interest-bearing debt	32.2 billion yen
➤ D/E ratio	0.14
(Net D/E ratio)	-0.04
➤ Inventory	100.1 billion yen
Turnover	2.7 months
➤ ROE	18.3%

## As of August 31, 2018

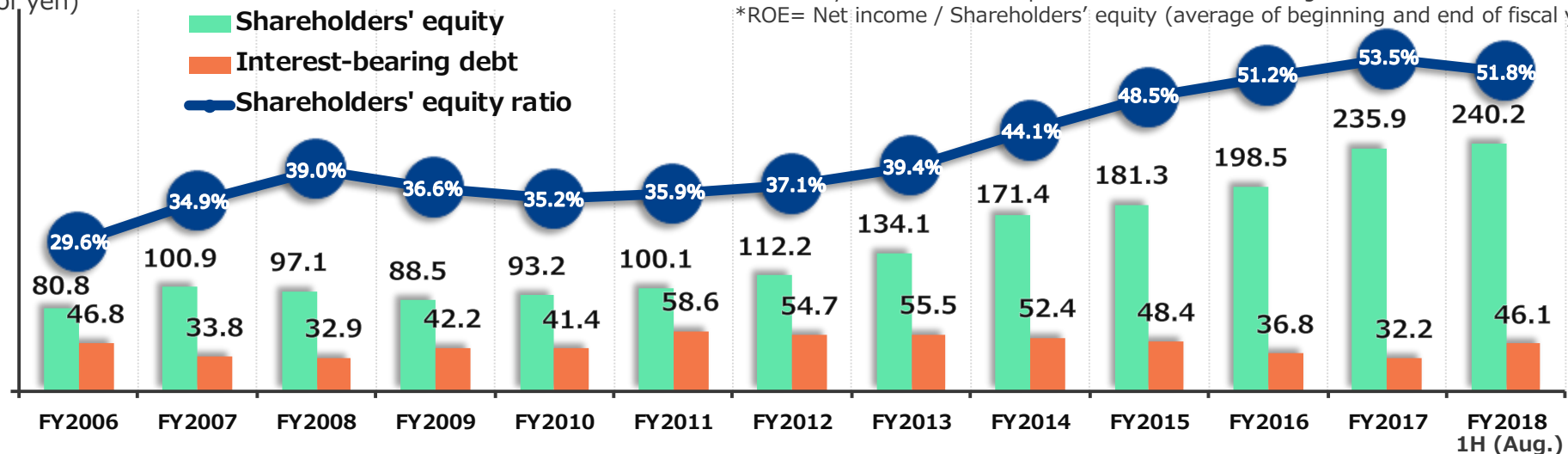
➤ Shareholders' equity ratio	51.8%
➤ Shareholders' equity	240.2 billion yen
➤ Interest-bearing debt	46.1 billion yen
➤ D/E ratio	0.19
(Net D/E ratio)	-0.02
➤ Inventory	108.2 billion yen
Turnover	2.6 months

\*Interest-bearing debt includes lease obligations.

\*Inventory at the end of the period is used for calculating turnover months.

\*ROE= Net income / Shareholders' equity (average of beginning and end of fiscal year)

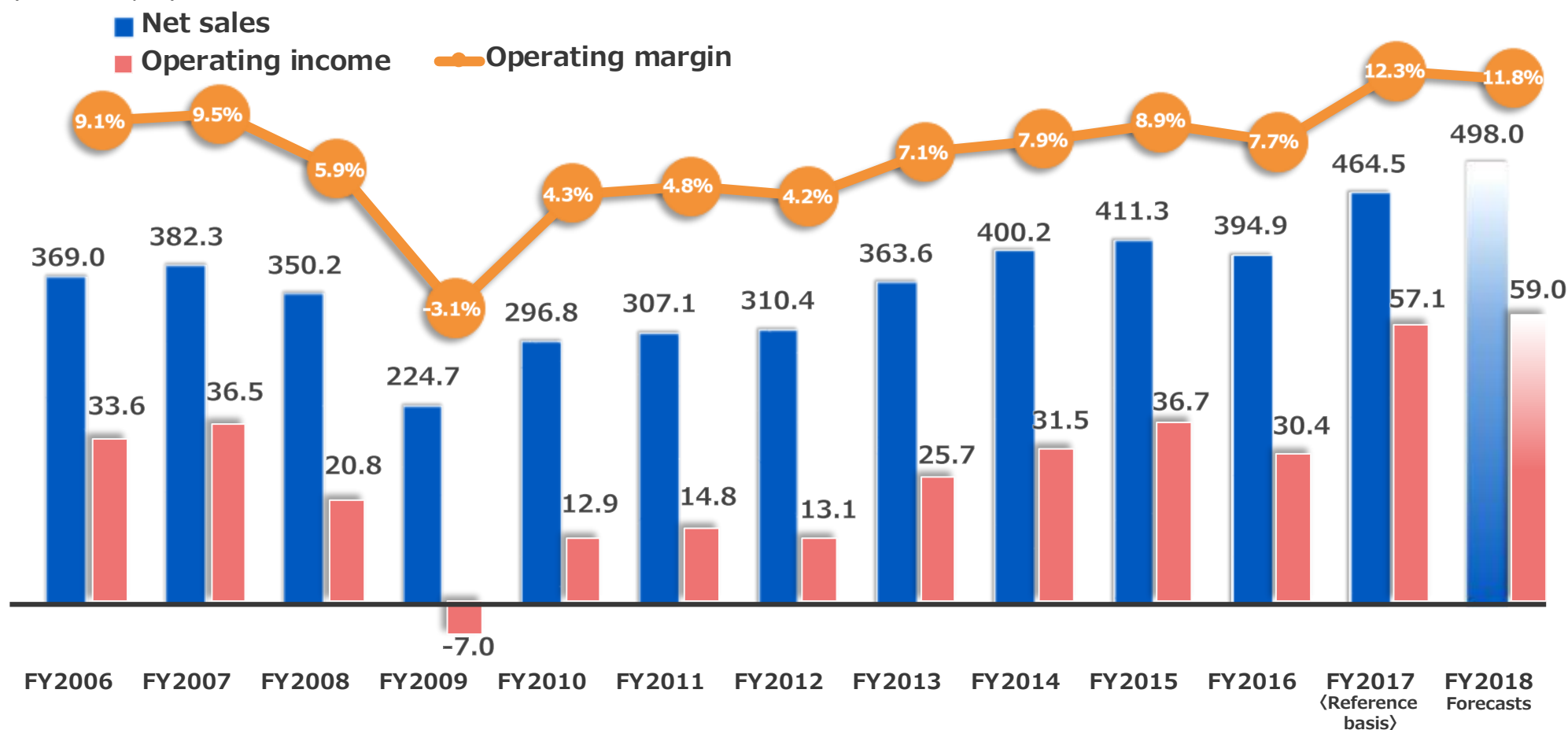
(Billions of yen)



Operating CF	15.0	17.7	12.5	4.0	2.5	6.4	24.6	24.0	29.0	32.0	33.8	46.1	22.3
Investment CF	- 6.1	- 9.9	- 10.7	- 6.5	- 6.7	- 11.9	- 18.1	- 16.9	- 27.9	- 22.4	- 18.9	- 18.9	- 8.8
Free CF	8.9	7.8	1.8	- 2.4	- 4.3	- 5.5	6.6	7.0	1.1	9.5	14.8	27.2	13.5

# Net Sales/Operating Income (FY2006-2018 Forecasts)

(Billions of yen)



**Dash 100**

**Challenge 100**

**Realize 100**

**Dash 25**

**Mid-term business plans**

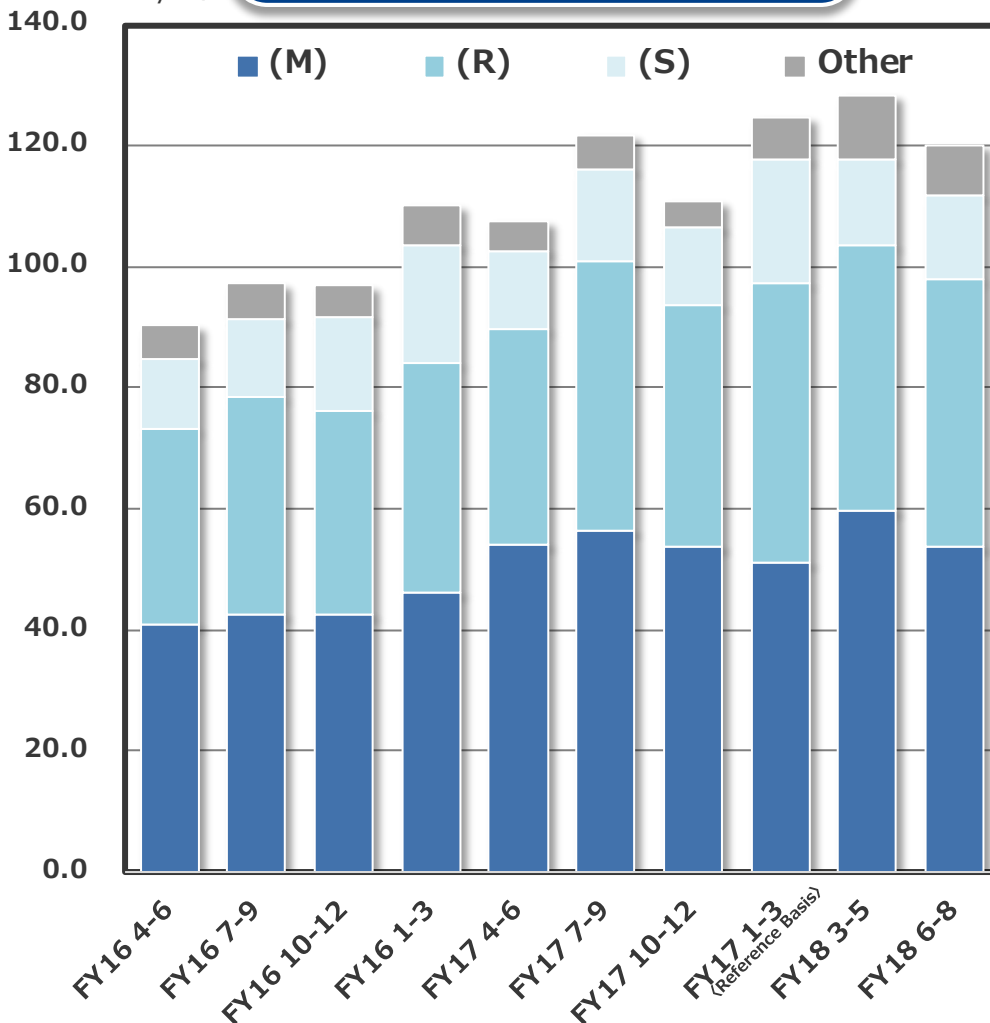
Note: The data for FY2017 are made on a reference basis. (March 21, 2017 – March 20, 2018)



# Quarterly Sales Trends (1)

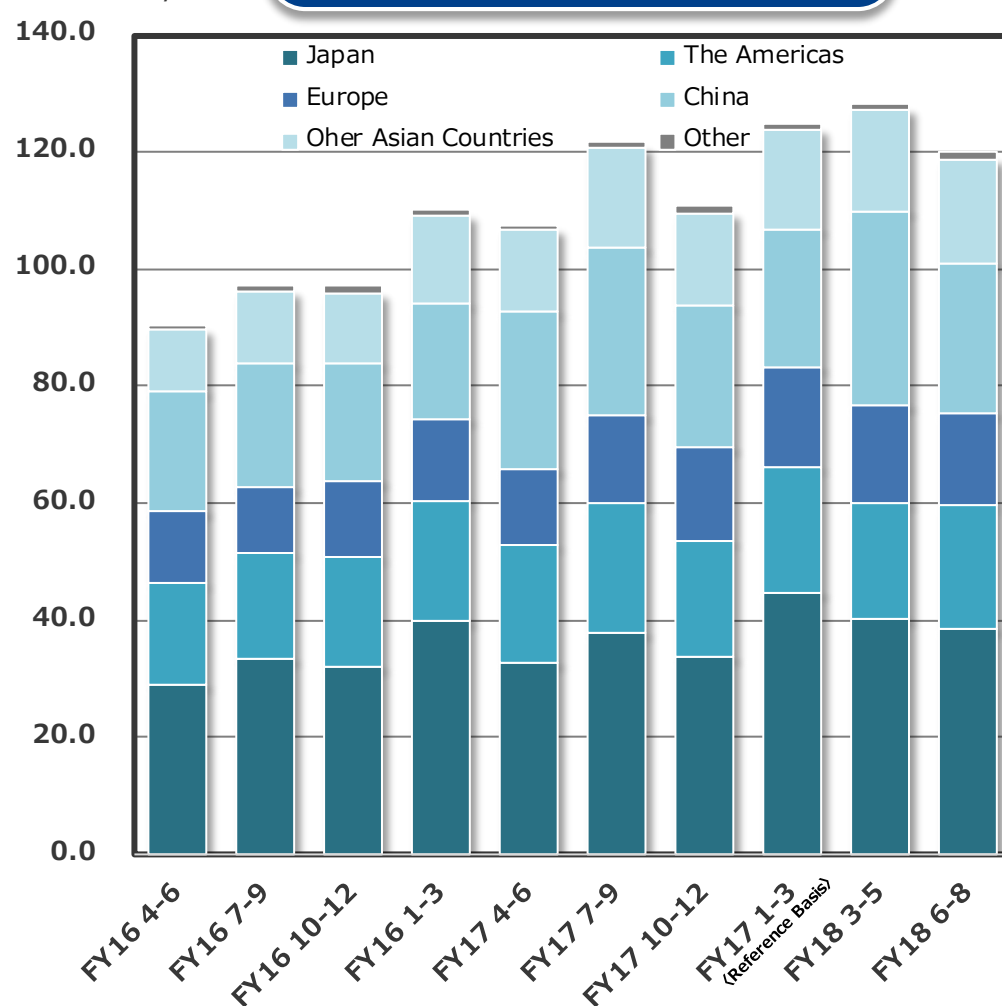
## Business segment

(Billions of yen)



## Destination

(Billions of yen)



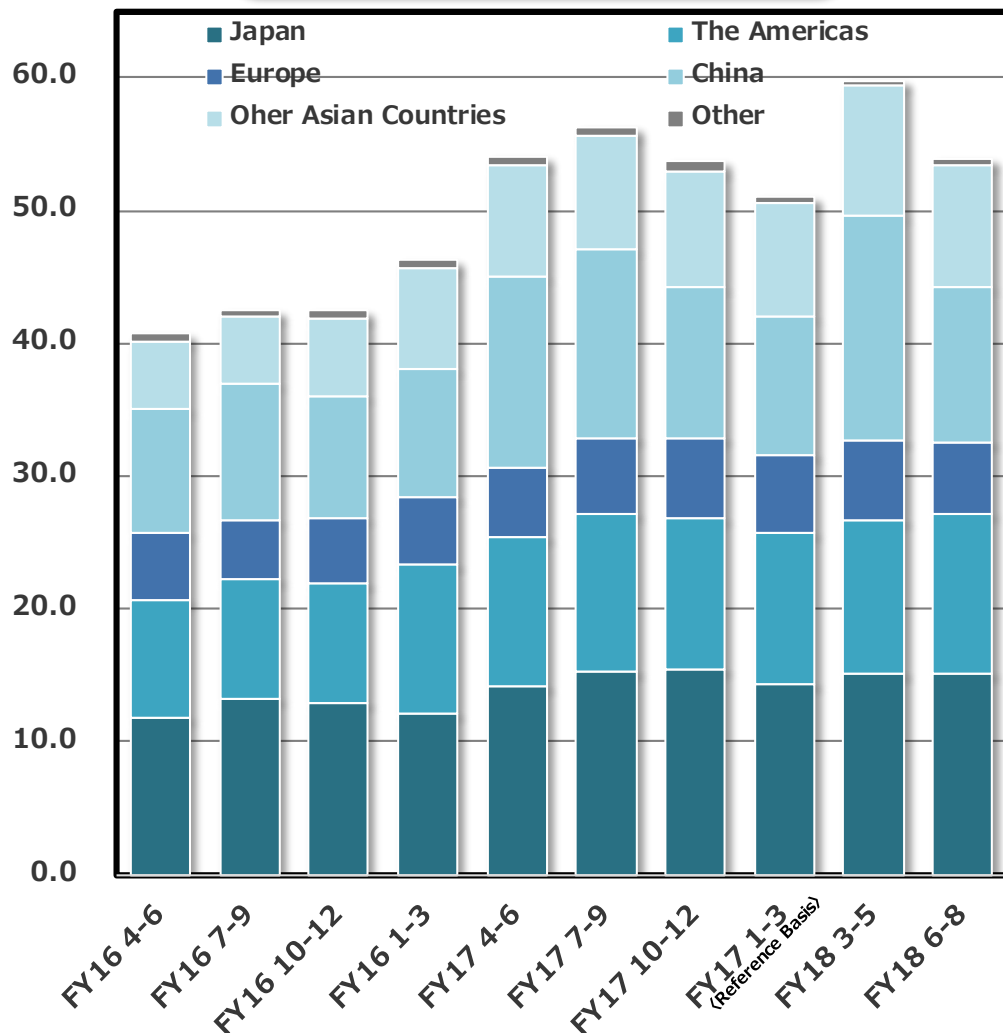
Note1: The data for FY2017 4Q(1-3) are made on a reference basis. (December 21, 2017 – March 20, 2018)

Note2: (M) = Motion Control (R) = Robotics (S) = System Engineering

# Quarterly Sales Trends (2)

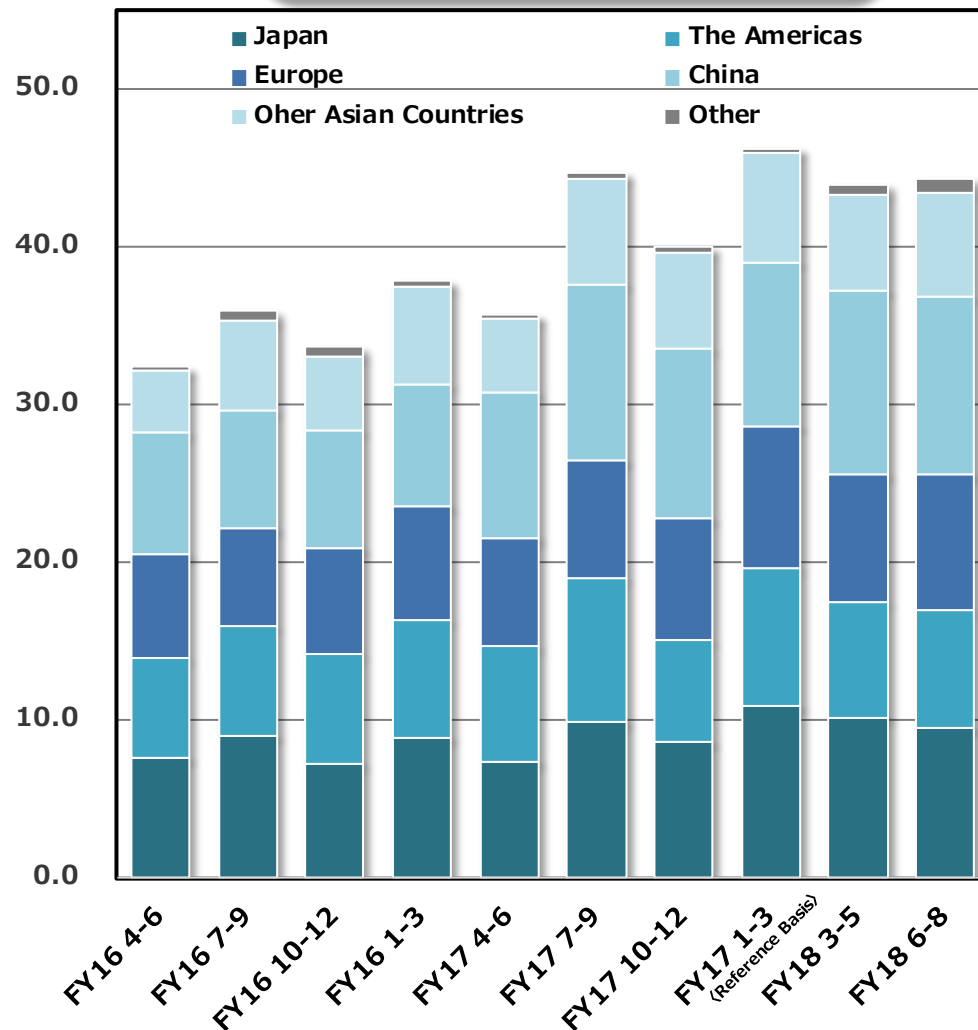
## Motion Control

(Billions of yen)



## Robotics

(Billions of yen)



Note: The data for FY2017 4Q(1-3) are made on a reference basis. (December 21, 2017 – March 20, 2018)

# Quarterly Order Trends by Business Segment \*Average forex rates during period used

(Billions of Yen)

140

120

100

80

60

40

20

0

Other

System Engineering

Robotics

Motion&Control

FY2016

FY2017

FY2018

Apr.-Jun.

Jul.-Sep.

Oct.-Dec.

Jan.-Mar.

Apr.-Jun.

Jul.-Sep.

Oct.-Dec.

Jan.-Mar.  
(Reference basis)

Mar.-May

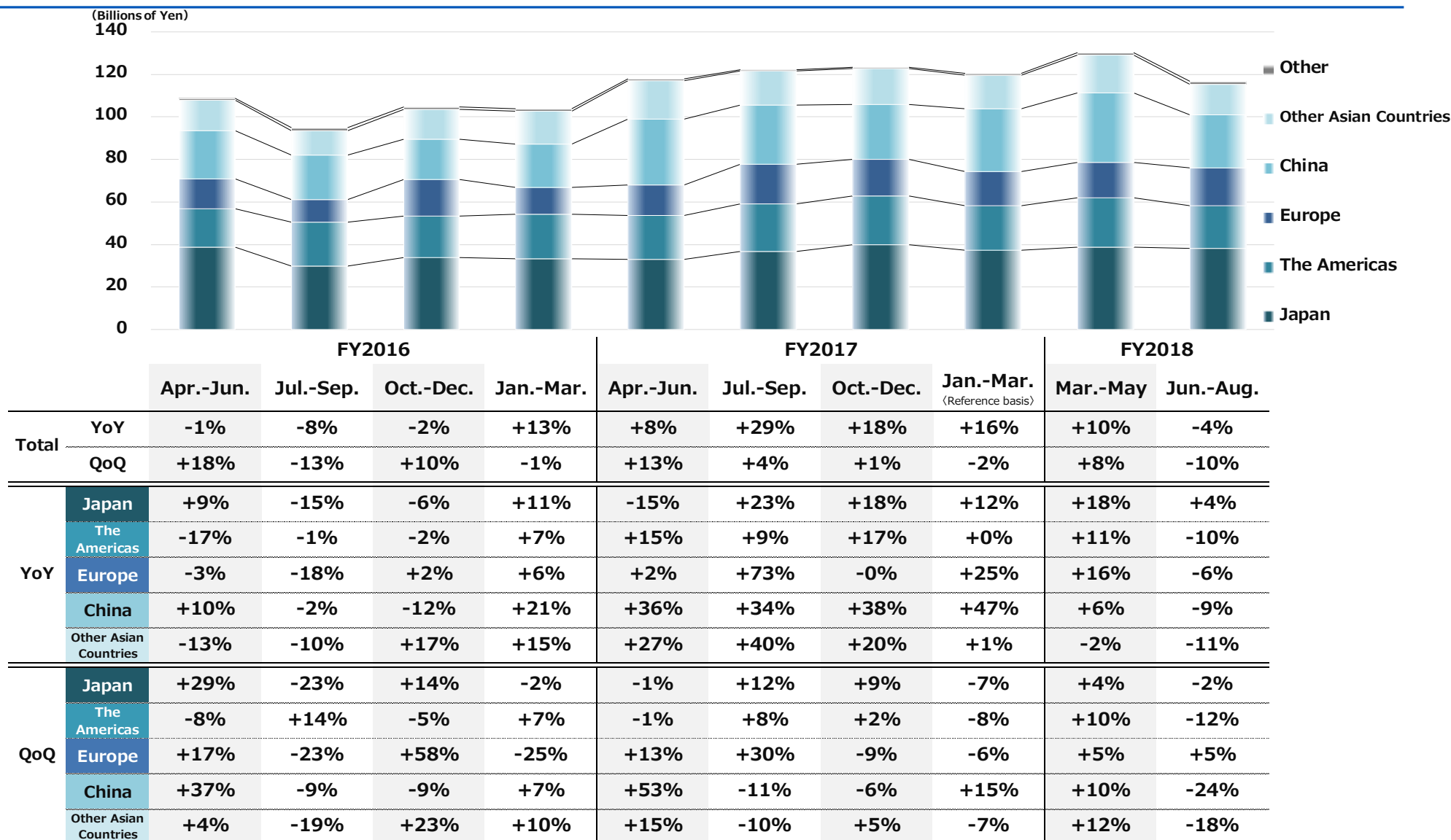
Jun.-Aug.

Total	YoY	Apr.-Jun.	Jul.-Sep.	Oct.-Dec.	Jan.-Mar.	Apr.-Jun.	Jul.-Sep.	Oct.-Dec.	Jan.-Mar.	Mar.-May	Jun.-Aug.
		-1%	-8%	-2%	+13%	+8%	+29%	+18%	+16%	+10%	-4%
YoY	QoQ	+18%	-13%	+10%	-1%	+13%	+4%	+1%	-2%	+8%	-10%
YoY	(M)	-12%	-12%	+5%	+17%	+39%	+31%	+17%	+5%	-1%	-11%
	(R)	-9%	-11%	+5%	+7%	+14%	+31%	+25%	+24%	+15%	+7%
	(S)	+106%	+31%	-24%	+43%	-59%	+33%	-10%	+24%	+42%	-24%
QoQ	(M)	+3%	-4%	+8%	+9%	+23%	-10%	-3%	-2%	+17%	-19%
	(R)	+12%	-11%	+13%	-5%	+19%	+2%	+8%	-6%	+11%	-4%
	(S)	+134%	-33%	+14%	-20%	-33%	+118%	-23%	+11%	-23%	+16%
Forex rates	U.S. dollar	110.8	103.5	104.8	114.5	111.9	111.1	112.2	110.7	107.8	110.8
	Euro	124.5	115.6	115.3	121.5	120.9	127.9	132.4	134.2	130.9	128.9

Note1: (M) = Motion Control (R) = Robotics (S) = System Engineering

Note2: The data for FY2017 4Q(Jan.-Mar.) are made on a reference basis. (December 21, 2017 – March 20, 2018)

# Quarterly Order Trends by Destination \*Average forex rates during period used



Note: The data for FY2017 4Q(Jan.-Mar.) are made on a reference basis. (December 21, 2017 – March 20, 2018)

# Major Production Bases



# **YASKAWA**